THE SELECTION OF TYPE-SPECIES OF SOME OLD GENERA OF FERNS

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Some early genera of ferns are so heterogeneous that the authors cannot have had clear ideas in founding them. It is sometimes possible to exclude certain species as not conforming to the author's generic description, but it is often not possible to say that one species rather than another is clearly indicated by that description. The generic description is thus not an infallible guide in the selection of a type-species.

The usual procedure has been to follow the first author who divides a genus. The process may be repeated more than once. Often the authors who split genera did not indicate a type-species; one can only agree that the type-species must be contained in that part of the original genus which is retained under the original generic name.

It may occur that subsequent authors in dividing a genus do not pay attention to the original generic description, and so may retain under the original generic name a species that does not well agree with that description, removing all others to another genus or genera. In such cases it may seem reasonable to select a new type-species of the original genus. But if (as often happens) none of the original species correspond uniquely to the description, there may well be difference of opinion as to which species most nearly corresponds to it. The result will be confusion. I suggest that, in the interests of uniformity of nomenclature, it is better to follow the first divider of a genus, even though he may not select (by implication or otherwise) a type-species that most nearly corresponds to the original description. This may not be ideal arrangement; but in practice no ideal arrangement is possible, and I suggest that it is better to follow a definite rule rather than an indefinite one which will allow of differences of opinion and, as a result, confusion of nomenclature. On the other hand, there should certainly be a recommendation that a later author, in dividing a genus, should principally consider the generic description when selecting a type-species.

Linnean genera can be treated like any others, having regard to the convention that the species described in 1753 are associated with the generic descriptions of 1754, and to the rule that legitimate nomenclature begins in 1753 (art. 20).

I apply these principles to the names of certain fern genera as follows:

1. **Pteropsis** Desv. 1827.

This genus included five different genera, by modern standards. The species which most nearly agrees with the original generic description is *Pteropsis scolopendrina,* which is a Vittaria (an earlier genus). It is therefore reasonable to regard Pteropsis as a synonym of Vittaria, and this is actually the effect of the action of the botanists who have in succession removed from Pteropsis the following: Drymoglossum Presl (1836), Paltonium Presl (1849), Eschatogramme Trevisan (1851), Ananthacorus Und. & Maxon (1908). I see no reason why *Pteropsis piloselloides* should be chosen as type-species of Pteropsis. It does not well agree with the generic description, and after Presl separated it in 1836 no botanist appears to have restored it to Pteropsis until Underwood and Maxon in 1908.

2. **Trichomanes** Linn. 1753.

In Species Plantarum 1753 eleven species are included in this genus. The generic description of 1754 would apply equally to *T. crispum* and to *T. scandens,* and there is nothing in the publications of 1753 and 1754 which would indicate one rather than the other as type-species of the genus.

The 19th century botanists who subdivided Trichomanes all agreed in leaving in it *T. scandens* and its near allies. Moreover, these are admitted by Copeland to represent a primitive and unspecialized section of the genus Trichomanes *sens. lat.*

But Copeland in 1937 (Philip. Journ. Sci. 67: 51) proposed a new generic name Vandenboschia for *T. scandens* and its near allies, on the ground that the type-species of Trichomanes is *T. crispum,* which he considers to typify a genus distinct from *T. scandens.* The reason for the selection of *T. crispum* as type-species is that it was the first species described as Trichomanes by Linnaeus, in 1737. But legitimate botanical nomenclature begins in 1753, and there is nothing in the Rules which instructs us to refer to earlier literature. We are in fact referred to generic descriptions of 1754. It is true that in the case of Trichomanes, reference to an earlier work gives us a single original species of our genus. But it would not always do so; and the obligation to search all literature earlier than 1753 in order to find the first species in each genus as understood by Linnaeus in 1753 would not only add greatly to the present amount of purely bibliographical work of taxonomists; it would also present many new problems which would allow of differences of opinion. The result would not be conducive to stability of nomenclature, and would involve the expenditure of much effort which would be better directed to the study of the plants themselves.

I therefore contend that the type-species of Trichomanes should be *T. scandens*, not *T. crispum*, and that the generic name Vandenboschia Copel. is superfluous.

3. **Belvisia** Mirbel 1802.

When originally describing this genus, Mirbel discussed its relation to Blechnum, to Pteris and to *Asplenium septentrionale.* All species included by Mirbel in his new genus, except *B. spicata*, had compound leaves, and from his discussion it is clear that he regarded *B. spicata* as an aberrant member of the genus. *B. spicata* is however the only species left in Belvisia after the other species have been removed to the older genera Blechnum, Pteris and Asplenium. Therefore, though it does not agree best with the generic description, I agree to accept it as the type-species of the genus.

As the name Hymenolepis Kaulf. is illegitimate, being a later homonym of Hymenolepis Cassini, Belvisia takes its place, being the next generic name in order of priority.

4. **Thelypteris** Schmidel 1762.

Copeland, in Gen. Fil. pp. 135–136, rejects Thelypteris on the ground that it was not validly published by Schmidel. Alston had previously commented as follows on this subject (Kew Bull. 1932: 309):

> It has been argued (Mackenzie in Am. Fern Journ. XVII, 117–119) that Schmidel was making use of a uninomial nomenclature; this is clearly untrue, as he uses the name Commelina for three distinct species. That Schmidel regarded his names as generic is clear from p. 104 where he speaks of Micheli's genus Sphaerocarpus. That Schmidel considered his genera to be published is apparent from his proposal of a new genus (Tegamum, p. 67).

Copeland objects that Schmidel's name *Thelypteris non ramosa* distinguishes it "not from Acrostichum of Linnaeus but from the older Thelypteris which we know as Pteridium". Schmidel was in fact reviving a genus published by Ruppius in 1718. The two species in that genus were *T. dioscoridis* (= Pteridium aquilinum) and *T. palustris non ramosa*. Neither belongs to Acrostichum, and there was nothing wrong in Schmidel maintaining a genus for them; the fact that we now consider them to belong to two different genera is irrelevant. Schmidel published a long description and an excellent plate. It is a better basis than that of many fern genera, and I consider it to be valid.

5. **Ctenopteris** (Blume) Kunze 1846.

The name Ctenopteris was published by Blume in 1828, in a conspectus of the sections of the genus Polypodium. The preceding section (Goniophlebium) is clearly indicated as such; but of Ctenopteris Blume remarks that it is sufficiently distinct to warrant separation as a genus. He does not however make the separation, nor use the name Ctenopteris when later describing the species concerned. It is clear therefore that he was in effect describing a section of Polypodium, not a new genus. The first author to take up Blume's name and to publish binomials under it was Kunze (*Bot. Zeit.* 4: 425. 1846). Kunze did not describe the genus, but referred to Blume's description, so validating Ctenopteris as a generic name.

Different authors would define differently the limits of Ctenopteris. In Blume's original list are species with both superficial and immersed sori; and one of the latter (*C. venulosa,* type also of Cryptosorus Fée) is chosen by Copeland as the type-species. It may be contended that there is no sharp distinction between *C. venulosa* and the genus Prosaptia Presl (1836). It is also clear that Xiphopteris Kaulf. (1820) is a closely allied genus which might not unnaturally be united to Ctenopteris. (J. Smith placed *Polypodium trichomanoides,* which is a Xiphopteris, in Ctenopteris).

I consider that, if Ctenopteris, Prosaptia and Xiphopteris are united, Ctenopteris is the most appropriate name, Xiphopteris and Prosaptia referring to special characters not shared by the whole group. I have therefore proposed the conservation of Ctenopteris to have precedence over Xiphopteris and Prosaptia whenever either of these is united to Ctenopteris as typified by *C. venulosa* (Bl.) Kunze.